

Notice of Allowability

Application No.

10/759,009

Examiner

Bernard E. Souw

Applicant(s)

KUNINAKA ET AL.

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amdt 05/23/2005.
2. ☒ The allowed claim(s) is/are 1-14.
3. ☒ The drawings filed on 20 January 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Applicant's Amendment

1. The Amendment filed 05/23/2005 has been entered. The present Office Action is made with all the arguments being fully considered.

The specification has been amended.

A new Abstract has been submitted.

Claims 1-14 remain pending in this office action.

Objection to the Specification Withdrawn

2. The specification having been properly amended, the previous objections are now withdrawn.

§ 112 Rejection Withdrawn

3. The claims having been properly amended, the previous rejections of claims 1-6 under 35 U.S.C. §112, first paragraph, are now withdrawn.

ALLOWANCE

4. Claims 1-14 are allowed.

Reasons for Allowance

5. The following is an examiner's statement of reasons for allowance:

A device for observing high-altitude neutral air, comprising an ion source disposed on an orbit of the earth for discharging ion particles, and a neutral particle analyzer also disposed on an orbit of the earth, wherein the relative position between the ion source and the neutral particle analyzer is **not predetermined**, as recited in claim 7, has not been anticipated or rendered obvious by any prior art.

Claim 1 is allowed for reciting a method for observing high-altitude neutral air, comprising the steps of: discharging ion particles so as to be influenced by earth magnetic field, colliding the ion particles with high-altitude neutral air to generate high velocity neutral particles through charge exchange, and detecting the so generated high velocity neutral particles to determine the distance to said high-altitude neutral air from the discharging positions of the ion particles and the detection positions of the high velocity neutral particles from the period of time between the time of discharge of the ion particles and the time of detection of the high velocity neutral particles, to determine the moving direction of said high-altitude neutral air and the spatial position of the high-altitude neutral air, wherein the relative position between the discharging position of the ion particles and the detected positions of the neutral particles is **not predetermined**, as recited in claim 1, has not been anticipated or rendered obvious by any prior art.

Claims 2-6 and 8-14 are also allowed because of its/their dependencies, either directly or indirectly, upon claims 1 or 7.

6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Relevant Prior Art

7. This prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

► (a) Collier et al., Journal of Geophysical Research, Vol. 106(a11), pages 24,593-24,906. November 1, 2001; and (b) R.A. Heelis, "Sensor Development Thermospheric Neutral Wind Measurements", AFRL-VS-HA-TR-2004-1028; both disclose a device and/or method for measuring high altitude neutral wind, also known in the art as ENA, (energetic neutral particles) by making use of charge exchange reactions with an ion beam from an ion source. However, in Collier's and Heelis's the relative position of the ion source to the ion detector is predetermined by the device design.

► (c) USPAT 3,207,895 issued to Schumacher; (d) USPAT 4,439,395 issued to Kim; and (e) USPAT 4,434,131 issued to Dagenhart et al.; disclose a method or device for measuring neutral particles through their ionization reaction. However, in Schumacher's device as well as in Kim's and Dagenhart's the relative position of the ion source to the ion detector is also predetermined by the device design.

Communications

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard E Souw whose telephone number is 571 272

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2482. The examiner can normally be reached on Monday thru Friday, 9:00 am to 5:00 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R Lee can be reached on 571 272 2477. The central fax phone number for the organization where this application or proceeding is assigned is 571 273 8300 for regular communications as well as for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571 272 5993.

bes
July 25, 2005


JOHN R. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800